

In the Specification

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[0018] Beam 33 is used to melt the lower end 37 of metal wire 35 and a shallow portion of upper surface 24 of support plate 23, the melted metal forming puddle 39 ahead of roller 27 when fabricator 19 is in operation. As end 37 is melted and applied, additional metal is provided by continuously feeding wire 35 toward beam 33 or by delivering additional powdered metal through a tube. Puddle 39 is molten where beam 33 is directly on puddle 39, but the trailing edge of puddle 39 becomes plasticized, or an amorphous solid, where puddle 39 has cooled to below the melt temperature. Gantry 21 positions post 25 and roller 27 relative to support plate 23 to produce layers 17 in the desired location in the horizontal plane and with the desired thickness by rolling over the plasticized portion of puddle 39 in a continuous-motion process beginning at end 41 and moving to the right in the figure. Roller 27 displaces a volume of the metal as it rolls over the metal and creates the desired thickness in each 17. Post 25, ~~device 33~~, beam 33, and wire 35 preferably maintain their relative positioning during operation.